

***United States Court of Appeals
for the
District of Columbia Circuit***



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**In the United States Court of Appeals for
the District of Columbia**

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ELECTRONS, INC., ERICHA MEYER AS EXECUTRIX OF
THE ESTATE OF FRIEDRICH MEYER, DECEASED,
HANS J. SPANNER AND EDMUND GERMER, APPEL-
LANTS

v.

CONWAY P. COE, COMMISSIONER OF PATENTS,
APPELLEE

APPEAL FROM THE DISTRICT COURT OF THE UNITED
STATES FOR THE DISTRICT OF COLUMBIA

BRIEF FOR THE COMMISSIONER OF PATENTS

R. F. WHITEHEAD,
*Solicitor, U. S. Patent Office,
Attorney for Appellee.*

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This is an appeal by the plaintiffs below from a decree of the District Court of the United States for the District of Columbia (R. p. 12) dismissing the bill of complaint.

The suit was filed under the provisions of Section 4915 R. S. (U. S. C. Title 35, Sec. 63) and asked that the Commissioner of Patents be authorized to issue on the application of Friedrich Meyer, Hans Joachim Spanner, and Edmund Germer, No. 241,034, filed December 19, 1927, a patent containing claims 49, 50, 51, 53, 54, 55, 56, 57, and 58.

It may be noted that the bill prayed for the issuance of a patent "including the subject matter of the said claims 49, 50, 51, 53, 54, 55, 56, 57, and 58"; and it is so stated in the second prayer of the bill.

However, it is well settled by the decisions of this Court that no claims may be considered in a proceeding brought under the provisions of Section 4915, R. S., which had not been passed upon by the Board of Appeals of the Patent Office. (See *Lucke et al. v. Coe*, 63 App. D. C. 61, 69 F. (2d) 379, 1934 C. D. 44, and *Bakelite Corporation v. Coe*, 65 App. D. C. 296, 83 F. (2d) 553, 1936 C. D. 26.

The application for patent filed by Meyer, Spanner, and Germer referred to the invention as an improvement in "Source of Chemically Active Spectral Rays" and the second paragraph of the specification (R. p. 54) reads as follows:

Our invention relates to the production of chemically active spectral rays and more especially to means whereby chemically active rays such as ultraviolet rays can be produced and utilized in a particularly simple, efficient, and economical manner.

The specification is found on pages 54, 55, 56, and 59 of the record and the drawing forming part of the application is found on page 57.

In the second of the findings of fact made by the court below, the disclosure of the application is described as follows (R. p. 10):

2. The application of Meyer et al. discloses a spectral ray lamp adapted to emit

ultraviolet rays. It is composed of an evacuated envelope forming an elongated discharge path with two fixed electrodes therein, one of which at least is a Wehnelt type cathode, with a low pressure gaseous atmosphere comprising a rare gas, such as argon, adapted to support a heavy current discharge and a source of metallic vapor, such as mercury, which is normally incapable of supporting a low voltage discharge. The discharge through the rare gas is adapted to raise the pressure of the metallic vapor and the ionization of the same sufficiently to cause the metallic vapor to carry and maintain the discharge and become the main source of the emitted spectral rays.

The Wehnelt cathode referred to in the application is one consisting of a conductor having an oxide coating and it is specifically stated in the specification of the application that a cathode comprising an activated metal, such as combinations of molybdenum or tungsten with thorium, would be found useful.

The claims will be found on pages 59, 60, 61, and 62 of the record and are printed at the back of appellants' brief.

Claims 49 and 54, which are illustrative, read as follows:

49. A spectral ray lamp comprising an evacuated envelope forming an enclosed elongated discharge path, two fixed electrodes therein, one of which is a Wehnelt type cathode, and a low pressure gaseous at-

mosphere comprising a rare gas adapted to support a heavy current discharge, and a source of metallic vapor normally incapable of supporting a low voltage discharge in the envelope, the said discharge through the rare gas being adapted to raise the vapor pressure of the metallic vapor and the ionization of the same sufficiently to cause the metallic vapor to carry and maintain the discharge and become the main source of the emitted spectral rays.

54. A metal vapor lamp of high capacity which can be started and operated directly from ordinary alternating house lighting voltages, comprising a vessel pervious to the desired spectral rays, two fixed main discharge electrodes spaced apart and forming with the walls of said vessel an elongated discharge path therein, at least one of said electrodes being a Wehnelt type cathode, an auxiliary electrode adjacent said cathode, an inert gas atmosphere, and a source of metallic vapor the pressure of which increases with rise in temperature; said cathode in cooperation with the gas atmosphere and said auxiliary electrode being capable of starting and maintaining a heavy current, low voltage gas discharge between said electrodes thereby forming an enclosed luminous gas column between the main electrodes adapted to raise the pressure of said metallic vapor and its density throughout the main discharge path sufficiently to cause it to support said low voltage discharge as the desired main source of spectral radiation.

These claims were rejected on the ground that there would be no invention in making the envelope of the Kruh patent, No. 1,032,914, of quartz and no further invention in introducing into the envelope of that patent an inert gas, such as neon or argon, for the purpose of starting the operation of the lamp.

The court below made a similar conclusion of law (R. p. 12) and a further conclusion of law that it would be no invention to substitute for one of the electrodes of the George patent, No. 1,671,109, a Wehnelt electrode. (The number of the George patent is incorrectly given. It should be No. 1,361,710.)

The Kruh patent, No. 1,032,914 (R. pp. 139 et seq.), discloses a mercury vapor lamp designed to be operated by either direct or alternating current. It comprises a glass envelope in which there is mounted an anode, a cathode of the Wehnelt type, and an auxiliary electrode adjacent the cathode with a body of mercury serving as the source of spectral emission. No rare gas is employed in connection with the Kruh lamp.

The patent to George, No. 1,671,109 (R. p. 144 et seq.), discloses an apparatus for increasing the emission in the ultraviolet region from mercury-vapor lamps and comprises a quartz envelope filled with an inert gas, such as argon or neon (the so-called rare gases) and having electrodes which connect with mercury pools, the inert gas facilitating the discharge.

The patent to George, No. 1,361,710 (R. p. 147 et seq.), discloses in Figure 3 a mercury-vapor lamp comprising a quartz tube containing an atmosphere of inert gas, electrodes formed of tungsten wire, and adjacent to each of them a small pool of mercury.

It must be borne in mind in considering this case that none of the elements of the claims were specifically new. It was known that ultraviolet rays are practically stopped by ordinary glass and that the walls of a quartz tube are pervious to such rays. The use of the rare gases for the same purpose that they are used in applicants' device, namely, for facilitating the starting of the apparatus, was also old.

In the specification of the application in suit (R. p. 55), it is stated that when a voltage is connected with the electrodes forming part of the tube, a glow current will pass between them, and that statement means in ordinary language that when current is turned on the rare gases will form a conductor between the two electrodes so that the current will pass.

It is also stated that this "glow current" which passes between the electrodes will ionize the mercury molecules which will emit great quantities of ultraviolet rays.

The George patents, above referred to, particularly the George patent No. 1,671,109, show and describe the use of the rare gases in a mercury-vapor tube for the same purpose.

It is stated that the tube is filled with an inert gas, such as argon, neon, etc., and the pressure of that gas has for its object to insure the lighting and starting of the lamp and its operation on alternating current.

During the taking of the testimony much was said about the operations of these so-called "mercury-vapor" devices and it was specifically testified that these devices operated only when the temperature had been raised sufficiently high to vaporize the mercury which was usually in the bottom of the tube and that there was always on the surface of this mercury pool a so-called "hot stop" which moves over the surface and causes flickering.

It is further argued that the ordinary mercury tube would never be operated on low current because when the current fell below a certain amount, vaporization would cease, the "hot spot" would be quenched, and the lamp would go out.

In the Kruh patent, No. 1,032,914, there is shown an auxiliary electrode, 15 in Fig. 1 of the drawing, and it is particularly stated that that lamp can be operated with a small current. The statement in the specification reads as follows:

When the apparatus is adjusted to take a small current I find that the operation apparently is not that of the ordinary mercury arc, for there is no cathode spot produced on the surface of the mercury, nor does there seem to be anything equivalent thereto. On the contrary, the current flow

fills the tube with a brilliant illumination taking place through mercury vapor in the tube, which illumination in appearance, at least, is exactly like that of the well-known mercury arc lamp except that there is no cathode spot on the mercury and, therefore, absolutely no flickering or pulsation in the light. (Page 1, lines 80-94, inclusive.)

It is further stated:

With respect to the use of a helix, as for example in Fig. 1, I may mention that when this helix is kept constantly excited, current of a very small value may be used in the tube, so small indeed that no mercury arc would be possible under ordinary conditions. Small light units are thus rendered feasible and these units are of high efficiency.

It appears from the testimony and the record that Kruh, whose patent was assigned to the General Electric Company, was a prominent electrician. There is not one syllable in this record to show that any attempt was ever made to operate a device made in accordance with the description and drawing of the Kruh patent, and that it would not work in the manner stated in the above quotations from the specification of that patent. There was made in the Patent Office a demonstration of a lamp said to have been made in accordance with the Kruh design, but that demonstration was not repeated during the trial of this case.

If the Kruh device did not and could not, as stated in the testimony of the witness Burke, oper-

ate in the manner above described, then it would seem to have been not a very difficult matter to have established that by actual tests.

It is submitted, therefore, that on this record we must start in considering the question of invention with the Kruh device operating in the manner described in his patent.

The George patents abundantly show the use of an inert gas for the purpose of starting into operation devices of the type here involved.

It is not denied, and could not be denied, that there would be no invention in making the envelope, or tube, shown in the Kruh patent of quartz rather than of glass, since these mercury-vapor devices were known to emit ultraviolet rays and it was also known that these rays would pass through the walls of the tube made of quartz.

It is submitted, therefore, that the teaching of the art was sufficient to justify the conclusion that it was not invention to build up a tube in accordance with the description of plaintiff's specification and use a rare gas as a means for starting the operation of the device and keeping it alive when operated on alternating current.

Much has been said in the brief as to what other people had done and it is argued that prominent electricians—for example, Dr. Steinmetz, of the General Electric Company; Kruh, of the General Electric Company; and George, who was a prominent French electrician, never thought of making

this particular device, but that alone, it is submitted, is not conclusive.

It is to be noted that the claims presented here, with the exception of Claim 58 (numbered 57 in appellant's brief), consist largely of functional statements as to what the device will do. Stripped of these functional limitations these claims are literally anticipated by the substitution of the rare gas in the Kruh tube.

There was introduced in evidence on behalf of defendant the patent to Hull, Reissue No. 19,057 (R. p. 163). This patent was not offered as an anticipation of the claims in suit but merely for the purpose of showing that in devices of this character it was not necessary to use a mercury pool but that a small quantity of mercury could be used, as indicated at 12 in Fig. 2. On page 2 of the specification, lines 99 and 100, it is said:

As shown in Fig. 2, a drop of mercury 12 may be introduced as a source of vapor.

The George patent, No. 1,361,710 (R. p. 147), shows in Fig. 3 a mercury tube and two pools of mercury and an electrode adjacent each of them. If for one of those electrodes there is substituted a Wehnelt electrode, such a structure would be an embodiment of the structure of all of the claims. As pointed out above, the use of these Wehnelt electrodes was well known and their characteristics were known, and such a substitution, therefore, it is submitted, was well within the skill of the art.

There is a peculiar situation in this case, upon which appellants lay a great deal of stress. All but one of the claims in suit were before the Board of Appeals prior to the appeal upon which the decision holding these claims unpatentable was rendered. That latter decision will be found on pages 91 to 95 of the record.

On the first appeal the Board had held these claims, except claim 54, patentable over a French patent which is not in the present record. The examiner's holding as to those claims was reversed by the Board of Appeals, as was also his holding with reference to claim 54, which had been rejected on Kruh, in view of George, No. 1,671,109.

After that decision was handed down, the examiner called attention to a decision of the United States Court of Customs and Patent Appeals in *In re Zecher and Mellema*, 21 C. C. P. A. 1041, 70 F. (2d) 270, 1934 C. D. 387, in which that Court had held unpatentable claims upon a very similar device. He was authorized to reopen the case in view of that decision, and on the second appeal to the Board of Appeals all the claims here in suit were held unpatentable, the Board basing its holding largely upon the *Zecher case*.

As showing how closely the devices of that case and this are to each other, the following quotation is made from the decision of the United States Court of Customs and Patent Appeals:

The disclosure of the application is an electric discharge tube having an outer glass

wall, and an inner quartz wall transparent to ultraviolet rays. The tube is so arranged that objects which are to be treated with ultraviolet rays may be inserted within the interior of the quartz tube and subjected to the action of the rays. The tube has one cathode, two principal anodes, and one auxiliary anode situated close to the cathode, used in starting the discharge within the tube. The cathode is, preferably constituted by a tungsten helix which has wound on it a nickel wire, and the cathode is superficially coated with barium oxide. The discharge tube contains a small quantity of mercury and argon, the argon being to facilitate the discharge.

There was another feature to the Zecher and Mellema device, namely, the outer wall of the tube was made of glass, and there was an inner tube, open at the top, formed of quartz, into which articles could be placed which it was desired to have treated by the action of the ultraviolet rays.

The United States Court of Customs and Patent Appeals affirmed the rejection of the claims there in issue. These claims, it may be noted, refer to the structural features of the device and in form are more like claim 58 of the claims here in suit than the remaining claims.

It is argued in the brief that this decision is not in point and should not have been made the basis of rejection because of the statement in the decision that "It may be that the appellants have patentable

subject matter, if the claims of their application were specific as to their structure.”

From the description above quoted, and from the showing as to the inner quartz tube which, in effect, formed a recess within the interior of the discharge tube, it is thought to be obvious that that reference to the features which might have been claimed has nothing to do with the matter here involved.

It is submitted that the decision of the United States Court of Customs and Patent Appeals on another case whose facts are so close to the facts of this case should be given great consideration and it is not to be lightly brushed aside.

As stated before, the claims, except claim 54, contain long statements of function but obviously an article claim, such as here involved, must stand for its invention upon what the device claimed is, and not upon what it will do.

Appellants here are not asking for a patent on the process or mode of operation of the device, but are asking for a patent on the device.

It is, of course, fundamental in this type of case that the decisions of the Patent Office are not to be lightly over-ruled, and that the decree of the lower court is not to be vacated upon a mere difference of opinion upon a question whether the Patent Office decision should be set aside, but that this Court must be clearly convinced that there was an error in refusing a patent before it will be justified in reversing the decree of the lower court.

A ruling to that effect was made by this Court some years ago in *Austin et al. v. Coe*, 63 App. D. C. 94, 69 F. (2d) 832, 1934 C. D. 53; and in the very recent decision of this Court in *Batteries Patents Corporation v. Coe*, decided September 13, 1937, it was again stated that such had been the ruling of this Court.

It is therefore submitted that the decree of the lower court should be affirmed.

R. F. WHITEHEAD,
Solicitor for the Patent Office,
Attorney for Appellee.

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